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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/656,032 | 09/05/2003 | John C. McCosh | PSI-05 | 8468 |

7590 02/10/2005
William J. Kolegraff
3119 Turnberry Way
Jamul, CA 91935

EXAMINER

TERESINSKI, JOHN

| | |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2858

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

18

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|------------------------------|-------------------------------|---------------------------------|--|
| Office Action Summary | Application No. 10/656,032 | Applicant(s) MCCOSH, JOHN C. | |
| | Examiner John Teresinski | Art Unit 2858 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,970,466 to Bolles et al..

Regarding claim 1, Bolles et al. disclose a controller periodically: generating a sync signal for transitioning a duration signal to an “on”/enabled state (column 11 lines 57-60); waiting a known delay time (column 18 lines 20-21); and generating a launch signal on a cable (column 11 lines 62-64);

a detection circuit: detection circuit detecting that the launch signal has bounced back using an adapted threshold (column 12 lines 9-10, column 13 lines 25-39); and transitioning responsive to detecting the bounced launch signal the duration signal to an “off”/disabled state (column 12 lines 10-12); an oscillator (75) providing a clock signal that is unrelated to the timing of the launch signal (column 8 lines 19-22); a counter for counting the number of clock signals received while the duration signal is in the “on”/enabled state (column 8 lines 35-42); and

a controller: compensating for the additional clock signals received on account of the known delay time (column 15 lines 37-42); and calculating cable length (column 12 lines 17-21).

Regarding claims 2 and 9, Bolles et al. disclose adjusting a threshold voltage to a plurality of voltage levels (column 13 lines 25-40), taking duration measurements at each voltage level (column 12 lines 13-15), aggregating the duration measurements and generating a set of measurements (column 13 lines 41-50), determining a voltage level at an inflection point in the bounced/reflected launch signal (column 13 lines 51-59) and using the determined voltage level as an adapted threshold level (column 13 lines 52-57).

Regarding claim 3, Bolles et al. disclose the set of measurements is used to determine an open or short condition (column 12 lines 21-29).

Regarding claims 4 and 5, Bolles et al. disclose an 8-bit counter (column 18 lines 7-16).

Regarding claim 8, Bolles et al. disclose the launch controller is constructed to generate a sync signal about every 40 microseconds (column 22 lines 30-31).

Regarding claim 11, Bolles et al. disclose providing a clock signal (75) and an adapted threshold (column 12 lines 9-10, column 13 lines 25-39), performing a measurement cycle which: starts a duration measurement (column 11 lines 57-60); provides a duration signal having a duration indicative of cable length, the duration signal being turned off responsive to comparing the adapted threshold to a bounced/reflected signal (column 12 lines 17-21); counting the number of clock pulses received during the duration that the duration signal is on (column 8 lines 35-42); repeating the measurement cycle (column 18 lines 17-60); averaging the results from the measurement cycle (column 13 lines 41-50) and calculating a cable length using the average results (column 18 lines 62-69).

Regarding claims 16 and 17, see claim 2 above.

Regarding claim 18, see claim 3 above.

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Regarding claim 19, Bolles et al. disclose turning a duration signal to an “on”/enabled state (column 11 lines 57-60), waiting a known delay time (column 18 lines 20-21), launching a launch signal on to a cable (column 11 lines 62-64), detecting a bounced/reflected signal (column 12 lines 9-10, column 13 lines 25-39), transitioning the duration signal to “off”/disabled using an adapted threshold (column 12 lines 10-20), measuring the duration that the duration signal was in the “on”/enabled state (column 8 lines 35-42), compensating the duration signal for the known delay time (column 15 lines 37-42), and calculating a cable length using the compensated duration signal (column 12 lines 17-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6,7,10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolles et al..

Regarding claims 6 and 7, Bolles et al. disclose an oscillator constructed to provide a clock signal of 100 Mhz (column lines). Bolles et al. does not disclose a clock signal clower than 50 MHz or at about 10 MHz. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a clock signal below 50 MHz or at about 10 MHz, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Regarding claims 10, 12 and 13, Bolles et al. disclose repeating the measurement cycle a plurality of times (column 18 lines 17-60) and counting a plurality of cycles (column 8 lines 35-42). Bolles et al. does not teach repeating the cycle thousands of times or counting up to a maximum number of 255. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include repeating the cycle a thousand times and counting up to a maximum number of 255, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolles et al. in view of U.S. Patent No. 6,075,833 to Leshay et al..

Regarding claims 14 and 15, Bolles et al. disclose the device and method as described above including counting the number of clock pulses but does not teach a Gray code counter or two-bit Gray code counting. Leshay et al. disclose a Gray code counter for counting clock signal events (column 3 lines 1-2) and two bit Gray code counting (column 4 lines 3-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the Gray code counting method as taught by Leshay et al. into Bolles et al. for the purpose of providing a more robust counter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Teresinski whose telephone number is (571) 272-2235. The examiner can normally be reached on M-F 8:30 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JT
JT

February 4, 2005

V. Nguyen

02/04/2005

**VINCENT Q. NGUYEN
PRIMARY EXAMINER**